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Let us appreciate this work of Hopkins and Whiting as an interesting contribution to the study of nitrification, but let us not draw too far-reaching and improper conclusions from it which are only partially applicable to field conditions.

In fact Hopkins and Whiting say in this Bulletin that:

"The addition of limestone with the insoluble phosphates prevents the detection of soluble phosphates."

They also say that:

"The nitrous acid produced may act upon compounds of iron, aluminum, potassium, sodium or magnesium which occur in soils, or it may act upon tricalcium phosphate, calcium silicate or calcium carbonate, if present."

In their hope of confining the solvent action of the nitrous acid as fully as possible to the raw phosphate rock, Hopkins has recommended that the phosphate be turned under in intimate contact with organic matter, yet when one realizes the even closer contact of the many soil particles with the organic matter at the same time, it will be obviously impossible for the nitrous acid to attack wholly or even chiefly the raw rock phosphate. This idea is fully supported by Thorne's practical field tests in Ohio, by the work of Mooers and others in Tennessee, and by the collective evidence of practically all of the agricultural chemists in the United States and Europe.

H. J. WHEELER

I gladly leave the judgment of the ethical and scientific questions involved to the impartial court of my colleagues at home and abroad.

H. J. WHEELER

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1916 OR 1816?

THE following announcement has appeared in the *Washington Times*, Wednesday, December 20, 1916:

PHRENOLOGIST TO SPEAK

Professor G. W. Savory, a graduate of the Fowler School of Phrenology of New York, will address the Enosinian Literary Society of George Washington University on the evening of January 15. His subject will be "Brains—How to Know and Handle Them." The lecture will be given in the assembly hall of the Arts and Sciences Department building, 2023 G street northwest.

Comments would seem superfluous.

A. HRDLIČKA

QUOTATIONS

SCIENCE IN GERMANY FROM AN ENGLISH VIEWPOINT

GERMANY has been held up to us so long as the model in all matters of state organization that most English students of institutions will read with surprise the letter published in another column, which has been addressed by the Committee of the Institution of German Engineers to Herr von Bethmann Hollweg in favor of the opening of the German civil service to men of scientific training. To-day the higher branches of the German civil service are reserved for lawyers, and are not open to graduates of the technical high schools. The evil of this system has long been felt in Germany. Ten years ago the German government admitted that the higher branches of their civil service were not manned in accordance with the requirements of the time. The training of those officials, even since the reforms of 1906, consist of a secondary-school course with a strong bias towards the humanities, followed by a short university course almost exclusively composed of legal subjects. The ordinary law course is the higher civil service course. Whatever a student's inclination or tendency may be, the legal training is a condition precedent to a civil service career. "Civil servants," the chancellor is told with pathetic force, "are called upon to deal with problems the expert solution of which calls for just the type of mental equipment that is provided by the technical high schools. . . . The forcible exclusion of the intellect that is available amongst these circles from participation in the higher civil service constitutes a waste of the intellectual powers of our nation."

The loss of the German nation under such an absurd system is not our concern; the point that we are interested in is that this nation, which claims to lead the world in administrative efficiency is in this instance, at least as dissatisfied with its achievements in the most important part of the organization of a nation as even England herself. Of course all the world knows now that Germany has long eked out her various weaknesses in administration by trumpeting that have brought down with a run the Jericho walls of foreign

prejudice. She has so long and so loudly insisted that she leads the world in all organization and administration that it is a shock to find that her civil service is admittedly inefficient. It is already well known that her social science, as reflected in the infant death-rate, is inefficient. Various branches of her educational system are very weak and ill-organized. We are beginning at last to realize that German face-values are not always true values. But this, though entertaining, is not necessarily comforting to us. Is our own Home Civil Service, devoted though it is, selected on a system that is calculated to secure men who have, as part of their outfit, the scientific method of thought? We do not want pure or applied scientists for our service any more than the Germans want lawyers. We believe that the German engineers are wrong in the system that they would substitute for the legal system. What is needed for an efficient civil service is a class of men and women trained to think, to see and to foresee.—*London Times Educational Supplement*.

SCIENTIFIC BOOKS

Soils, Their Properties and Management. By T. LYTLETON LYON, Ph.D., Professor of Soil Technology; ELMER O. FIPPIN, B.S.A., Extension Professor of Soil Technology; and HARRY O. BUCKMAN, Ph.D., Assistant Professor of Soil Technology, all of Cornell University. New York, The Macmillan Company. 764 pages.

This is a very complete text on soil technology, as can be seen from the following chapter heads: I. Some General Considerations; II. Soil-Forming Processes; III. The Geological Classification of Soils; IV. Geological Classification of Soils (Continued); V. Climatic and Geochemical Relationships of Soils; VI. The Soil Particle; VII. Some Physical Properties of the Soil; VIII. The Organic Matter of the Soil; IX. The Colloidal Matter of Soils; X. Soil Structure; XI. The Forms of Soil Water and their Movement; XII. The Water of the Soil in its Relation to Plants; XIII. The Control of Soil Moisture; XIV. Soil Heat; XV. Availability of Plant

Nutrients as Determined by Chemical Analysis; XVI. The Absorptive Properties of Soils; XVII. Acid or Sour Soils; XVIII. Alkali Salts; XIX. Absorption of Nutritive Salts by Agricultural Plants; XX. Organisms in the Soil; XXI. The Nitrogen Cycle; XXII. The Soil Air; XXIII. Commercial Fertilizers; XXIV. Soil Amendments; XXV. Fertilizer Practice; XXVI. Farm Manures; XXVII. Green Manures; XXVIII. Land Drainage; XXIX. Tillage; XXX. Irrigation and Dry Farming; XXXI. The Soil Survey.

Particular attention should be drawn to the all too brief chapters on the organic matter and the colloidal matter of soils, both of which are admirably done. The discussion is clear and to the point. Too often organic matter is hazily treated, and colloids neglected entirely. As a book of reference for students of soils this text is exceptionally good, not only for the subject-matter itself, but also for the profuse bibliography. But as a text for a general class in soil technology it is somewhat too comprehensive, and the subject-matter not sufficiently coordinated. The various phases of soil study are taken up as separate subjects and not treated as parts of a whole. Although the soil is a very complex material, its various functions work together and should be studied in their interrelationships.

There are a few corrections to be made. The word "protein" is better than "proteid," page 12, line 7. The formula for kaolinite on page 22 does not agree with the formula on page 9. The latter is correct. On page 128, line 14, "proteosis" should be "proteoses." There is too frequent use of the phrase "and the like" after a series of names. It is as bad as too many "and so forths."

The typography and binding are excellent. Such illustrations as are given are good, but a text should be more profusely illustrated for the average student. Good pictures well chosen add very greatly to the pedagogic value of a text-book. All things considered, however, the authors are to be congratulated on producing a book so complete, so accurate, so well written, and so useful to all students of the soil.

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